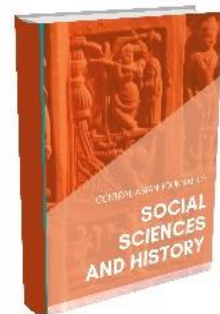




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Problems Arising From the Use of the Case-Study Method and Methods of Their Prevention

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Abstract:

The article presents the problems that arise when using the method of case-study in practical training in general electrical engineering and recommendations and suggestions for their prevention. In addition, there is a lesson plan for practical training based on the method of "case-study".

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The concept of development of the higher education system of the Republic of Uzbekistan until 2030 defines the strategic goals, priorities, objectives, medium and long-term stages of development of higher education and is the basis for the development of programs and comprehensive measures in this area.

In the concept of development of the higher education system of the Republic of Uzbekistan until 2030, the system of higher education is based on the needs of the social sphere and the economy, science, education and improving the quality of education based on ensuring strong integration of production, training of competitive personnel, effective organization of scientific and innovative activities, independent learning of students, critical and creative thinking, systematic analysis, formation of entrepreneurial skills, introduction of methods and technologies aimed at strengthening

competencies in the learning process. Orientation of the educational process to the formation of practical skills, the widespread introduction of advanced pedagogical technologies, curricula and teaching materials based on international educational standards in the educational process [1].

The above-mentioned tasks show that, along with all sectors, the energy system of our country should be provided with highly qualified engineers. This, in turn, sets the task of modernizing the system of training, in particular, the training of specialists who can provide higher education in special (specialty) subjects to undergraduate students in higher education.

It should be noted that in order to strengthen their scientific capacity, higher education institutions to carry out practical and innovative research and development activities on the orders of enterprises are among the most pressing tasks today.

In accordance with this decision, each higher education institution will establish promising partnerships with leading research institutions abroad, widely introduce the latest pedagogical technologies, educational programs and teaching materials based on international educational standards in the educational process. was identified as one of the most important tasks of complex development [2].

It should be noted that higher education institutions conduct practical and innovative research on the orders of enterprises in order to strengthen their scientific potential and the implementation of experimental and design activities is one of the most pressing tasks today.

Regular development of educational technology in improving the knowledge and professional competence of young professionals is one of the most pressing pedagogical issues. In order to increase the effectiveness of the audience and independent forms of teaching in the educational process, a number of teaching methods have been developed by foreign universities, including "Syllabus", "Case-study", "FSMU" (F - state your opinion; S - give a reason; M - give a reason provide proof; U - summarize your opinion), "Assessment", "Insert", "Concept Analysis", "Venn Diagram", "Blitz Game", "Briefing" and "Portfolio" methods. [3].

One of the most effective of these methods is the Case-study method. "Case-study" is an English word ("case" - a real situation, event, "study" - study, analysis) is a method of teaching based on the study, analysis of real situations. This method was used in the study of economic management sciences at Harvard University in 1921, based on practical situations. In a case-study, open information or a specific event can be used for analysis as a situation. Case-study activities include: *Who, When, Where, Why, How, What*. Through these actions, the teacher directs the student to find effective solutions to the situation using available information [4].

Develops students' ability to study and think independently using the method of "Case-Study" in the teaching of electrical engineering, in particular, the subject of "General Electrical Engineering". However, it is not possible to apply this method to all topics, as it is required to find a problem that has multiple solutions on each topic and to ensure that students have sufficient knowledge to solve the problem. Therefore, it is advisable to use the method of "Case-Study" in practical classes, after the theoretical knowledge on the subject in lectures. Below is Namangan Institute of Civil Engineering, Senior Lecturer of the Department of Energy Otamirzaev O.U. There is a practical lesson on "Three-phase electrical circuits" on the subject "General Electrical Engineering" developed by the method "Case-Study".

The practical training can be conducted in the following four stages:

Step 1 (10 minutes): Attendance is determined. Students are divided into three small groups. As a continuation of the topic "Three-phase electrical circuits", the task on the method of "Case-study" is explained to students using slides or folding materials.

Keys assignment:

The district power company received a letter of complaint from the owners of a group of rooms living in the area. The letter said that these homes will have more power outages in the winter than other homes. and the reason is that citizen Kamalov Ravshan illegally connected his greenhouse to the electricity grid and heated his greenhouse with electricity at night, which is why a machine gun in their line was activated and disconnected them from the power supply [4].

When a working group of specialists from the district's electricity network visited the houses and investigated the situation, it was found out that Ravshan Kamalov was not guilty of heating the greenhouse with a coal stove. District power grid experts could not determine the exact cause.

Homeowners were forced to turn to the public management of the open joint-stock company of the regional electricity network. The cause has been identified. In it, citizen Kamalov Ravshan was found not guilty.

Students are required to:

- Identify the cause options, ie the causes of power outages;
- Provide solutions to the situation;
- Identification of such cases, ie measures to prevent power outages [5].

Phase 2 (30 minutes): Phase 2 (30 minutes):

At the same time, students will perform the tasks of the case-study based on their knowledge of "Three-phase alternating current circuits" in lectures.

Each subgroup is given the following tasks on the case-study assignment:

Group 1: Identify the causes of power outages;

Group 2: Finding solutions to power supply problems;

Group 3: Identify measures to prevent power outages.

Phase 3 (30 minutes): In this case, a student from group 1 will explain the above problem, ie what causes power outages in households. The reasons given will be discussed in all groups.

The main reason for the problem is that the load is symmetrical, ie more than 50% of the apartments on this street are connected to the "A" phase, and the remaining apartments are connected to the "V" and "C" phases.

Then a student from group 2 will explain the **solutions to this problem**. The answers will be discussed with the students. It should be noted that the solution to the problem is to distribute all apartments equally in three phases.

After that, a student from group 3 will explain **the problem prevention** measures. The opinions expressed, suggestions and recommendations will be discussed. To prevent this problem, students are explained the feasibility of using modern energy-saving insulated conductors (SIP self-insulated conductors) designed for 0.4 kV transmission lines and their following advantages:

- There will be no waste at all when the wire is touched by trees;
- If the line breaks to the ground, there will be no short circuit to the ground, safety will be ensured;
- a uniform distribution of loads in the phases occurs and no voltage drop occurs in some phases;
- the same amount of connection of electricity consumers for each phase is provided, as well as the prevention of long-distance towing of individual phases in a separate fragmentation state;
- reliable contact is provided at the connection nodes of the power consumers and the waste there is eliminated. This is because special clamps and clamps designed for special connection are used to connect this wire;
- arbitrary connection of consumers to the network will be eliminated. In these networks, each connection is made through special accounts;
- compensates for reactive power losses that occur in power transmission lines.

It can be said that the use of “self-insulated conductors”, which have a number of advantages mentioned above, in the low-voltage power grids of the country will prevent large energy losses, save a large part of the generated electricity.

At the same time, students are informed about the work being done in the Republic on measures to prevent power outages. including in accordance with the Resolution of the Cabinet of Ministers No. 260 of April 27, 2020 "On measures to accelerate the introduction of an automated system of accounting and control of electricity". Further increase the level and quality of the country's electricity networks, creating favorable conditions for socio-economic development of the regions. and the current state of low-voltage power grids is analyzed in order to further improve the living conditions of the population. It is planned to establish a transparent system of full accounting of electricity consumed by all consumers of electricity in the country and the establishment of standards for technological consumption of electricity.

Without ensuring the reliable operation of the electricity sector, increasing the industrial potential of industries and regions of the country, stimulating the development of entrepreneurial activity, improving the welfare of the population and improving the quality of life will not be achieved.

In modern conditions, the development of a competitive environment in the electricity sector and the attraction of investment requires a radical improvement of the institutional and organizational and legal framework for activities in the field of electricity generation and supply.

Along with all the ongoing work in the power system of the Republic, the rational use of electricity has been developed and distributed and one of the main urgent tasks is to reduce the waste that occurs when consuming it.

Phase 4 (10 minutes): In doing so, the teacher identifies the group that is most actively involved in the lesson, the most active and knowledgeable student, and encourages them. It then assesses active

students in all small groups. Students will be given independent assignments. It is recommended to get acquainted with them and answer any questions that arise. Literature on finding independent information on independent work assignments and questions will be provided. Students' opinions about the lesson will be asked and the lesson will end [7].

In conclusion, it can be said that students develop independent thinking when conducting a practical lesson on "Three-phase electrical circuits" on the subject of "General Electrical Engineering" on the basis of the method of "Case-study". Theoretical knowledge on the topic acquired during the lectures is strengthened. If knowledge is independently understood, felt, studied in the face of difficulties, then this knowledge will be fully and deeply mastered. All this will depend on the science being studied, the ability to study, the effective use of time in planning activities, self-control, error correction, and so on.

Regular mental activity by the student develops the need for mental activity and teaches students to use time wisely. Thus, the development of independent learning activities of future professionals, ensuring the coherence of teaching and research work, the involvement of students in research work, on the basis of which it is possible to improve the quality of training of mature professionals.

References:

1. Ўзбекистон Республикаси Президентининг 2019 йил 8 октябрдаги «Ўзбекистон Республикаси олий таълим тизимини 2030 йилгача ривожлантириш концепцияси тўғрисида»ги ПФ-5847-сон фармони.
2. Отамирзаев, О. У., Зокирова, Д. Н., & Вахобова, С. К. (2016). Методические рекомендации по организации самостоятельной работы студентов. *International scientific journal*, (4 (1)), 26-28.
3. Отамирзаев, О. У., & Зокирова, Д. Н. (2018). Тажриба машғулотларини мустақил ўрганишга ундовчи таълим бериш орқали олиб бориш. *Современное образование (Узбекистан)*, (3).
4. Отамирзаев, О. У., & Вахобова, С. К. (2018). «Назарий электротехника» фанидан «Уч фазали ўзгарувчан ток занжирлари» мавзусини ўқитишда кейс-стади методидан фойдаланиш. *Современное образование (Узбекистан)*, (5).
5. Отамирзаев, О. У., & Зокирова, Д. Н. (2019). «Электр ёритиш» фанини ўқитишда «Бумеранг» методидан фойдаланиш. *Современное образование (Узбекистан)*, (3 (76)), 37-41.
6. Отамирзаев О. У. ТАЛАБАЛАРНИНГ МУСТАҚИЛ ФИКРЛАШЛАРИНИ ШАКЛЛАНТИРИШ УСУЛЛАРИ ВА УЛАРНИНГ ТАҲЛИЛИ //Современное образование (Узбекистан). – 2021. – №. 11 (108). – С. 9-13.
7. Отамирзаев О. У. и др. ПРОБЛЕМЫ И МЕТОДЫ ИХ УСТРАНЕНИЯ ПРИ ПРИМЕНЕНИИ МЕТОДА «БУМЕРАНГ» В ПРОЦЕССЕ ПРЕПОДАВАНИЯ ЭЛЕКТРОТЕХНИКИ //Научное знание современности. – 2021. – №. 6. – С. 14-17.
8. Usubovich O. O., Ne'matillaevna Z. D. METHODOLOGY OF USING CONNECTING ELEMENTS OF SCIENCE IN THE ORGANIZATION OF INDEPENDENT WORK OF THE

SCIENCE OF HYDROELECTRIC POWER STATIONS //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 3. – С. 654-661.

9. ОТАМИРЗАЕВ О. У., АТАМИРЗАЕВ Т. У., ИСМОИЛОВ Х. А. Ў. АСПЕКТЫ РАЗВИТИЯ САМОСТОЯТЕЛЬНОГО МЫШЛЕНИЯ СТУДЕНТОВ С ПРИМЕНЕНИЕМ ИНТЕРАКТИВНЫХ МЕТОДОВ //НАУЧНОЕ ЗНАНИЕ СОВРЕМЕННОСТИ Учредители: Индивидуальный предприниматель Кузьмин Сергей Владимирович. – №. 11. – С. 16-20.
10. Отамирзаев О. У., Зокирова Д. Н., Вахобова С. К. Проект занятий, основанных на принципах педагогической технологии //Science Time. – 2015. – №. 12 (24). – С. 606-610.
11. Отамирзаев О. У., Шарипов Ф. Ф. Методика проведения лабораторных занятий с интерактивными методами //Science Time. – 2017. – №. 2 (38). – С. 270-273.
12. Sayfullayeva, D. A., Tosheva, N. M., Nematova, L. H., Zokirova, D. N., & Inoyatov, I. S. (2021). Methodology of using innovative technologies in technical institutions. *Annals of the Romanian Society for Cell Biology*, 7505-7522.
13. Зокирова, Д. Н. (2021). INTEGRATION OF PROFESSIONAL AND EDUCATIONAL DISCIPLINES INTO TRAINING OF SELF-LEARNING MOTIVATED STUDENTS. *Современное образование (Узбекистан)*, (6), 24-28.
14. Nematillaevna, Z. D. (2021). Problems in providing independent learning education and ways to prevent them. *ACADEMICIA: AN INTERNATIONAL MULTIDISCIPLINARY RESEARCH JOURNAL*, 11(1), 1431-1436.
15. Nematillaevna, Z. D. (2021). Problems in providing independent learning education and ways to prevent them. *ACADEMICIA: AN INTERNATIONAL MULTIDISCIPLINARY RESEARCH JOURNAL*, 11(1), 1431-1436.
16. Zokirova, D. N. (2021). Goals And Objectives Of Organizing Independent Work Of Students. *The American Journal of Social Science and Education Innovations*, 3(01), 179-182.
17. Зокирова, Д. Н. (2018). " ЭЛЕКТРОМЕХАНИКА" ФАНИ МИСОЛИДА АУДИТОРИЯДАН ТАШҚАРИДА МУСТАҚИЛ ТАЪЛИМ ОЛИШ ШАКЛЛАРИ. *Научное знание современности*, (5), 78-83.